Daniel Herschlag

List of Publications by Year
in descending order

147 papers	17,403 citations	16791 66 h-index	16791 127 g-index
151 all docs	151 docs citations	151 times ranked	14037 citing authors

#	Article	IF	Citations
1	Direct Measurement of Interhelical DNA Repulsion and Attraction by Quantitative Cross-Linking. Journal of the American Chemical Society, 2022, 144, 1718-1728.	6.6	8
2	Cation enrichment in the ion atmosphere is promoted by local hydration of DNA. Physical Chemistry Chemical Physics, 2021, 23, 23203-23213.	1.3	10
3	The structural ensemble of a Holliday junction determined by X-ray scattering interference. Nucleic Acids Research, 2020, 48, 8090-8098.	6.5	10
4	How to measure and evaluate binding affinities. ELife, 2020, 9, .	2.8	251
5	Quantitative Studies of an RNA Duplex Electrostatics by Ion Counting. Biophysical Journal, 2019, 117, 1116-1124.	0.2	28
6	The roles of structural dynamics in the cellular functions of RNAs. Nature Reviews Molecular Cell Biology, 2019, 20, 474-489.	16.1	322
7	Enhancement of RNA/Ligand Association Kinetics via an Electrostatic Anchor. Biochemistry, 2019, 58, 2760-2768.	1.2	3
8	A Quantitative and Predictive Model for RNA Binding by Human Pumilio Proteins. Molecular Cell, 2019, 74, 966-981.e18.	4.5	55
9	The Story of RNA Folding, as Told in Epochs. Cold Spring Harbor Perspectives in Biology, 2018, 10, a032433.	2.3	42
10	Pseudouridine and <i>N</i>⁶-methyladenosine modifications weaken PUF protein/RNA interactions. Rna, 2017, 23, 611-618.	1.6	50
11	Determination of Ion Atmosphere Effects on the Nucleic Acid Electrostatic Potential and Ligand Association Using AH⁺Â·C Wobble Formation in Double-Stranded DNA. Journal of the American Chemical Society, 2017, 139, 7540-7548.	6.6	23
12	Differential catalytic promiscuity of the alkaline phosphatase superfamily bimetallo core reveals mechanistic features underlying enzyme evolution. Journal of Biological Chemistry, 2017, 292, 20960-20974.	1.6	24
13	Slow molecular recognition by RNA. Rna, 2017, 23, 1745-1753.	1.6	35
14	Single-Molecule Fluorescence Reveals Commonalities and Distinctions among Natural and <i>in Vitro</i>-Selected RNA Tertiary Motifs in a Multistep Folding Pathway. Journal of the American Chemical Society, 2017, 139, 18576-18589.	6.6	14
15	Visualizing the formation of an RNA folding intermediate through a fast highly modular secondary structure switch. Nature Communications, 2016, 7, ncomms11768.	5.8	50
16	Tungstate as a Transition State Analog for Catalysis by Alkaline Phosphatase. Journal of Molecular Biology, 2016, 428, 2758-2768.	2.0	22
17	Mechanistic and Evolutionary Insights from Comparative Enzymology of Phosphomonoesterases and Phosphodiesterases across the Alkaline Phosphatase Superfamily. Journal of the American Chemical Society, 2016, 138, 14273-14287.	6.6	40
18	Does Cation Size Affect Occupancy and Electrostatic Screening of the Nucleic Acid Ion Atmosphere?. Journal of the American Chemical Society, 2016, 138, 10925-10934.	6.6	50

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19	Kinetic and thermodynamic framework for P4-P6 RNA reveals tertiary motif modularity and modulation of the folding preferred pathway. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E4956-E4965.	3.3	20
20	An active site rearrangement within the <i>Tetrahymena</i> group I ribozyme releases nonproductive interactions and allows formation of catalytic interactions. Rna, 2016, 22, 32-48.	1.6	7
21	Differential Assembly of Catalytic Interactions within the Conserved Active Sites of Two Ribozymes. PLoS ONE, 2016, 11, e0160457.	1.1	0
22	Probing the kinetic and thermodynamic consequences of the tetraloop/tetraloop receptor monovalent ion-binding site in P4â€“P6 RNA by smFRET. Biochemical Society Transactions, 2015, 43, 172-178.	1.6	19
23	From static to dynamic: the need for structural ensembles and a predictive model of RNA folding and function. Current Opinion in Structural Biology, 2015, 30, 125-133.	2.6	36
24	Cationâ€“Anion Interactions within the Nucleic Acid Ion Atmosphere Revealed by Ion Counting. Journal of the American Chemical Society, 2015, 137, 14705-14715.	6.6	65
25	Evolutionary Conservation and Diversification of Puf RNA Binding Proteins and Their mRNA Targets. PLoS Biology, 2015, 13, e1002307.	2.6	54
26	Understanding Nucleic Acidâ€“Ion Interactions. Annual Review of Biochemistry, 2014, 83, 813-841.	5.0	358
27	Probing the Origins of Catalytic Discrimination between Phosphate and Sulfate Monoester Hydrolysis: Comparative Analysis of Alkaline Phosphatase and Protein Tyrosine Phosphatases. Biochemistry, 2014, 53, 6811-6819.	1.2	25
28	Ion Counting from Explicit-Solvent Simulations and 3D-RISM. Biophysical Journal, 2014, 106, 883-894.	0.2	102
29	Fundamental Challenges in Mechanistic Enzymology: Progress toward Understanding the Rate Enhancements of Enzymes. Biochemistry, 2013, 52, 2050-2067.	1.2	69
30	Ground State Destabilization by Anionic Nucleophiles Contributes to the Activity of Phosphoryl Transfer Enzymes. PLoS Biology, 2013, 11, e1001599.	2.6	35
31	Metal-ion rescue revisited: Biochemical detection of site-bound metal ions important for RNA folding. Rna, 2012, 18, 1123-1141.	1.6	36
32	A Role for a Single-Stranded Junction in RNA Binding and Specificity by the Tetrahymena Group I Ribozyme. Journal of the American Chemical Society, 2012, 134, 1910-1913.	6.6	8
33	Thermodynamic Evidence for Negative Charge Stabilization by a Catalytic Metal Ion within an RNA Active Site. ACS Chemical Biology, 2012, 7, 294-299.	1.6	7
34	High-Resolution Analysis of Zn2+ Coordination in the Alkaline Phosphatase Superfamily by EXAFS and X-ray Crystallography. Journal of Molecular Biology, 2012, 415, 102-117.	2.0	58
35	Electrostatics of Nucleic Acid Folding under Conformational Constraint. Journal of the American Chemical Society, 2012, 134, 4607-4614.	6.6	30
36	Single Molecule Analysis Research Tool (SMART): An Integrated Approach for Analyzing Single Molecule Data. PLoS ONE, 2012, 7, e30024.	1.1	81

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37	Isotope-Edited FTIR of Alkaline Phosphatase Resolves Paradoxical Ligand Binding Properties and Suggests a Role for Ground-State Destabilization. Journal of the American Chemical Society, 2011, 133, 11621-11631.	6.6	23
38	Tightening of Active Site Interactions En Route to the Transition State Revealed by Single-Atom Substitution in the Guanosine-Binding Site of the <i>Tetrahymena</i> Group I Ribozyme. Journal of the American Chemical Society, 2011, 133, 7791-7800.	6.6	5
39	Structureâ€"Function Analysis from the Outside In: Long-Range Tertiary Contacts in RNA Exhibit Distinct Catalytic Roles. Biochemistry, 2011, 50, 8733-8755.	1.2	14
40	Biological Phosphoryl-Transfer Reactions: Understanding Mechanism and Catalysis. Annual Review of Biochemistry, 2011, 80, 669-702.	5.0	340
41	Identification of RNA recognition elements in the Saccharomyces cerevisiae transcriptome. Nucleic Acids Research, 2011, 39, 1501-1509.	6.5	67
42	Multiple native states reveal persistent ruggedness of an RNA folding landscape. Nature, 2010, 463, 681-684.	13.7	187
43	Dissecting electrostatic screening, specific ion binding, and ligand binding in an energetic model for glycine riboswitch folding. Rna, 2010, 16, 708-719.	1.6	57
44	Measuring the Energetic Coupling of Tertiary Contacts in RNA Folding using Single Molecule Fluorescence Resonance Energy Transfer. Methods in Enzymology, 2010, 472, 205-220.	0.4	3
45	The Ligand-Free State of the TPP Riboswitch: A Partially Folded RNA Structure. Journal of Molecular Biology, 2010, 396, 153-165.	2.0	67
46	Multiple Unfolding Events during Native Folding of the Tetrahymena Group I Ribozyme. Journal of Molecular Biology, 2010, 400, 1067-1077.	2.0	29
47	A Rearrangement of the Guanosine-Binding Site Establishes an Extended Network of Functional Interactions in the <i>Tetrahymena</i> Group I Ribozyme Active Site. Biochemistry, 2010, 49, 2753-2762.	1.2	21
48	Do conformational biases of simple helical junctions influence RNA folding stability and specificity?. Rna, 2009, 15, 2195-2205.	1.6	53
49	Concordant Regulation of Translation and mRNA Abundance for Hundreds of Targets of a Human microRNA. PLoS Biology, 2009, 7, e1000238.	2.6	354
50	The far reaches of enzymology. Nature Chemical Biology, 2009, 5, 516-520.	3.9	24
51	Probing the Dynamics of the P1 Helix within the Tetrahymena Group I Intron. Journal of the American Chemical Society, 2009, 131, 9571-9578.	6.6	22
52	Probing Nucleic Acidâ€"Ion Interactions with Buffer Exchange-Atomic Emission Spectroscopy. Methods in Enzymology, 2009, 469, 375-389.	0.4	25
53	Metal Ion-Based RNA Cleavage as a Structural Probe. Methods in Enzymology, 2009, 468, 91-106.	0.4	56
54	Use of Phosphorothioates to Identify Sites of Metal-Ion Binding in RNA. Methods in Enzymology, 2009, 468, 311-333.	0.4	15

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55	Motions of the Substrate Recognition Duplex in a Group I Intron Assessed by Site-Directed Spin Labeling. Journal of the American Chemical Society, 2009, 131, 3136-3137.	6.6	42
56	Coarse-grained modeling of large RNA molecules with knowledge-based potentials and structural filters. Rna, 2009, 15, 189-199.	1.6	300
57	Methods of Site-Specific Labeling of RNA with Fluorescent Dyes. Methods in Enzymology, 2009, 469, 47-68.	0.4	52
58	A repulsive field: advances in the electrostatics of the ion atmosphere. Current Opinion in Chemical Biology, 2008, 12, 619-625.	2.8	80
59	Semiautomated and rapid quantification of nucleic acid footprinting and structure mapping experiments. Nature Protocols, 2008, 3, 1395-1401.	5.5	70
60	Unwinding RNA's secrets: advances in the biology, physics, and modeling of complex RNAs. Current Opinion in Structural Biology, 2008, 18, 305-314.	2.6	44
61	Testing Geometrical Discrimination within an Enzyme Active Site: Constrained Hydrogen Bonding in the Ketosteroid Isomerase Oxyanion Hole. Journal of the American Chemical Society, 2008, 130, 13696-13708.	6.6	91
62	Comparative Enzymology in the Alkaline Phosphatase Superfamily to Determine the Catalytic Role of an Active-Site Metal Ion. Journal of Molecular Biology, 2008, 384, 1174-1189.	2.0	103
63	Direct Measurement of Tertiary Contact Cooperativity in RNA Folding. Journal of the American Chemical Society, 2008, 130, 6085-6087.	6.6	63
64	Promiscuous Sulfatase Activity and Thio-Effects in a Phosphodiesterase of the Alkaline Phosphatase Superfamily. Biochemistry, 2008, 47, 12853-12859.	1.2	49
65	Critical Assessment of Nucleic Acid Electrostatics via Experimental and Computational Investigation of an Unfolded State Ensemble. Journal of the American Chemical Society, 2008, 130, 12334-12341.	6.6	74
66	Arginine Coordination in Enzymatic Phosphoryl Transfer: Evaluation of the Effect of Arg166 Mutations in <i>Escherichia coli</i> Alkaline Phosphatase. Biochemistry, 2008, 47, 7663-7672.	1.2	52
67	Structural inference of native and partially folded RNA by high-throughput contact mapping. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 4144-4149.	3.3	79
68	Diverse RNA-Binding Proteins Interact with Functionally Related Sets of RNAs, Suggesting an Extensive Regulatory System. PLoS Biology, 2008, 6, e255.	2.6	540
69	Systematic Identification of mRNAs Recruited to Argonaute 2 by Specific microRNAs and Corresponding Changes in Transcript Abundance. PLoS ONE, 2008, 3, e2126.	1.1	152
70	Modulation of individual steps in group I intron catalysis by a peripheral metal ion. Rna, 2007, 13, 1656-1667.	1.6	14
71	Low specificity of metal ion binding in the metal ion core of a folded RNA. Rna, 2007, 13, 1205-1213.	1.6	32
72	Structural Transitions and Thermodynamics of a Glycine-Dependent Riboswitch from Vibrio cholerae. Journal of Molecular Biology, 2007, 365, 1393-1406.	2.0	116

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73	Quantitative and Comprehensive Decomposition of the Ion Atmosphere around Nucleic Acids. Journal of the American Chemical Society, 2007, 129, 14981-14988.	6.6	255
74	Kinetic Isotope Effects for Alkaline Phosphatase Reactions:Â Implications for the Role of Active-Site Metal Ions in Catalysis. Journal of the American Chemical Society, 2007, 129, 9789-9798.	6.6	70
75	Measuring the Folding Transition Time of Single RNA Molecules. Biophysical Journal, 2007, 92, 3275-3283.	0.2	44
76	Evaluation of Ion Binding to DNA Duplexes Using a Size-Modified Poisson-Boltzmann Theory. Biophysical Journal, 2007, 93, 3202-3209.	0.2	134
77	Low-resolution models for nucleic acids from small-angle X-ray scattering with applications to electrostatic modeling. Journal of Applied Crystallography, 2007, 40, s229-s234.	1.9	37
78	The Paradoxical Behavior of a Highly Structured Misfolded Intermediate in RNA Folding. Journal of Molecular Biology, 2006, 363, 531-544.	2.0	92
79	Nanomechanical measurements of the sequence-dependent folding landscapes of single nucleic acid hairpins. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 6190-6195.	3.3	397
80	Genome-wide identification of mRNAs associated with the translational regulator PUMILIO in Drosophila melanogaster. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 4487-4492.	3.3	264
81	Direct Measurement of the Full, Sequence-Dependent Folding Landscape of a Nucleic Acid. Science, 2006, 314, 1001-1004.	6.0	356
82	SAFA: Semi-automated footprinting analysis software for high-throughput quantification of nucleic acid footprinting experiments. Rna, 2005, 11, 344-354.	1.6	299
83	Structural specificity conferred by a group I RNA peripheral element. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 10176-10181.	3.3	43
84	Probing counterion modulated repulsion and attraction between nucleic acid duplexes in solution. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 1035-1040.	3.3	97
85	Dissecting eukaryotic translation and its control by ribosome density mapping. Nucleic Acids Research, 2005, 33, 2421-2432.	6.5	120
86	Determining the Mg2+Stoichiometry for Folding an RNA Metal Ion Core. Journal of the American Chemical Society, 2005, 127, 8272-8273.	6.6	98
87	Alkaline Phosphatase Catalysis Is Ultrasensitive to Charge Sequestered between the Active Site Zinc Ions. Journal of the American Chemical Society, 2005, 127, 9314-9315.	6.6	42
88	Do Electrostatic Interactions with Positively Charged Active Site Groups Tighten the Transition State for Enzymatic Phosphoryl Transfer?. Journal of the American Chemical Society, 2004, 126, 11814-11819.	6.6	47
89	Principles of RNA Compaction: Insights from the Equilibrium Folding Pathway of the P4-P6 RNA Domain in Monovalent Cations. Journal of Molecular Biology, 2004, 343, 1195-1206.	2.0	118
90	Extensive Association of Functionally and Cytotopically Related mRNAs with Puf Family RNA-Binding Proteins in Yeast. PLoS Biology, 2004, 2, e79.	2.6	574

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91	Challenges in Enzyme Mechanism and Energetics. Annual Review of Biochemistry, 2003, 72, 517-571.	5.0	239
92	Exploration of the Transition State for Tertiary Structure Formation between an RNA Helix and a Large Structured RNA. Journal of Molecular Biology, 2003, 328, 1011-1026.	2.0	96
93	The Fastest Global Events in RNA Folding: Electrostatic Relaxation and Tertiary Collapse of the Tetrahymena Ribozyme. Journal of Molecular Biology, 2003, 332, 311-319.	2.0	130
94	Extraordinarily slow binding of guanosine to the Tetrahymena group I ribozyme: Implications for RNA preorganization and function. Proceedings of the National Academy of Sciences of the United States of America, 2003, 100, 2300-2305.	3.3	41
95	Genome-wide analysis of mRNA translation profiles in Saccharomyces cerevisiae. Proceedings of the National Academy of Sciences of the United States of America, 2003, 100, 3889-3894.	3.3	632
96	Rapid compaction during RNA folding. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 4266-4271.	3.3	207
97	Exploring the folding landscape of a structured RNA. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 155-160.	3.3	222
98	Precision and functional specificity in mRNA decay. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 5860-5865.	3.3	652
99	Probing the Tetrahymena Group I Ribozyme Reaction in Both Directions. Biochemistry, 2002, 41, 11171-11183.	1.2	41
100	RNA simulations: probing hairpin unfolding and the dynamics of a GNRA tetraloop 1 1Edited by J. Dovdna. Journal of Molecular Biology, 2002, 317, 493-506.	2.0	102
101	Alkaline Phosphatase Revisited:â€‰ Hydrolysis of Alkyl Phosphates. Biochemistry, 2002, 41, 3207-3225.	1.2	156
102	Dissection of a metal-ion-mediated conformational change in Tetrahymena ribozyme catalysis. Rna, 2002, 8, 861-872.	1.6	27
103	Probing the folding landscape of the Tetrahymena ribozyme: commitment to form the native conformation is late in the folding pathway. Journal of Molecular Biology, 2001, 308, 839-851.	2.0	97
104	Defining the Catalytic Metal Ion Interactions in theTetrahymenaRibozyme Reactionâ€. Biochemistry, 2001, 40, 5161-5171.	1.2	145
105	Comparison of the hammerhead cleavage reactions stimulated by monovalent and divalent cations. Rna, 2001, 7, 537-545.	1.6	143
106	Small angle X-ray scattering reveals a compact intermediate in RNA folding. Nature Structural Biology, 2000, 7, 367-370.	9.7	96
107	A Single-Molecule Study of RNA Catalysis and Folding. Science, 2000, 288, 2048-2051.	6.0	696
108	The P5abc Peripheral Element Facilitates Preorganization of the Tetrahymena Group I Ribozyme for Catalysis. Biochemistry, 2000, 39, 2639-2651.	1.2	62

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109	Use of Duplex Rigidity for Stability and Specificity in RNA Tertiary Structure. Biochemistry, 2000, 39, 6183-6189.	1.2	12
110	Specificity from steric restrictions in the guanosine binding pocket of a group I ribozyme. Rna, 1999, 5, 158-166.	1.6	29
111	Catalytic promiscuity and the evolution of new enzymatic activities. Chemistry and Biology, 1999, 6, R91-R105.	6.2	657
112	Nucleophilic Activation by Positioning in Phosphoryl Transfer Catalyzed by Nucleoside Diphosphate Kinaseâ€,â€¡. Biochemistry, 1999, 38, 4701-4711.	1.2	62
113	Characterization of a Local Folding Event of theTetrahymenaGroup I Ribozyme:Â Effects of Oligonucleotide Substrate Length, pH, and Temperature on the Two Substrate Binding Stepsâ€. Biochemistry, 1999, 38, 14192-14204.	1.2	27
114	Protonated 2â€˜-Aminoguanosine as a Probe of the Electrostatic Environment of the Active Site of theTetrahymenaGroup I Ribozymeâ€. Biochemistry, 1999, 38, 10976-10988.	1.2	28
115	Catalysis of Phosphoryl Transfer from ATP by Amine Nucleophiles. Journal of the American Chemical Society, 1999, 121, 5837-5845.	6.6	28
116	Does the Active Site Arginine Change the Nature of the Transition State for Alkaline Phosphatase-Catalyzed Phosphoryl Transfer?. Journal of the American Chemical Society, 1999, 121, 11022-11023.	6.6	43
117	Impaired Transition State Complementarity in the Hydrolysis ofO-Arylphosphorothioates by Protein-Tyrosine Phosphatasesâ€. Biochemistry, 1999, 38, 12111-12123.	1.2	63
118	Identification of the Hammerhead Ribozyme Metal Ion Binding Site Responsible for Rescue of the Deleterious Effect of a Cleavage Site Phosphorothioateâ€. Biochemistry, 1999, 38, 14363-14378.	1.2	193
119	New pathways in folding of the Tetrahymena group I RNA enzyme. Journal of Molecular Biology, 1999, 291, 1155-1167.	2.0	105
120	[11] Hydrogen bonding in enzymatic catalysis: Analysis of energetic contributions. Methods in Enzymology, 1999, 308, 246-276.	0.4	39
121	Ribozyme crevices and catalysis. Nature, 1998, 395, 548-549.	13.7	10
122	A Core Folding Model for Catalysis by the Hammerhead Ribozyme Accounts for Its Extraordinary Sensitivity to Abasic Mutationsâ€. Biochemistry, 1998, 37, 14765-14775.	1.2	45
123	Direct Demonstration of the Catalytic Role of Binding Interactions in an Enzymatic Reaction. Biochemistry, 1998, 37, 9902-9911.	1.2	46
124	Structureâ€"function relationships in the hammerhead ribozyme probed by base rescue. Rna, 1998, 4, 1332-1346.	1.6	23
125	MECHANISTIC ASPECTS OF ENZYMATIC CATALYSIS:Lessons from Comparison of RNA and Protein Enzymes. Annual Review of Biochemistry, 1997, 66, 19-59.	5.0	262
126	Mechanistic Investigations of a Ribozyme Derived from the Tetrahymena Group I Intron:Â Insights into Catalysis and the Second Step of Self-Splicingâ€. Biochemistry, 1996, 35, 5796-5809.	1.2	52

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127	pH Dependencies of the Tetrahymena Ribozyme Reveal an Unconventional Origin of an Apparent pKa. Biochemistry, 1996, 35, 1560-1570.	1.2	56
128	Isolation of a local tertiary folding transition in the context of a globally folded RNA. Nature Structural and Molecular Biology, 1996, 3, 701-710.	3.6	59
129	Mapping the transition state for ATP hydrolysis: implications for enzymatic catalysis. Chemistry and Biology, 1995, 2, 729-739.	6.2	183
130	RNA Chaperones and the RNA Folding Problem. Journal of Biological Chemistry, 1995, 270, 20871-20874.	1.6	632
131	The nature of the transition state for enzyme-catalyzed phosphoryl transfer. Hydrolysis of O-aryl phosphorothioates by alkaline phosphatase. Biochemistry, 1995, 34, 12255-12264.	1.2	151
132	Dissection of the Role of the Conserved G.cntdot.U Pair in Group I RNA Self-Splicing. Biochemistry, 1994, 33, 13864-13879.	1.2	88
133	A Kinetic and Thermodynamic Framework for the Hammerhead Ribozyme Reaction. Biochemistry, 1994, 33, 3374-3385.	1.2	287
134	Comparison of pH Dependencies of the Tetrahymena Ribozyme Reactions with RNA 2'-Substituted and Phosphorothioate Substrates Reveals a Rate-Limiting Conformational Step. Biochemistry, 1994, 33, 5291-5297.	1.2	76
135	The importance of being ribose at the cleavage site in the Tetrahymena ribozyme reaction. Biochemistry, 1993, 32, 8312-8321.	1.2	137
136	Contributions of 2'-hydroxyl groups of the RNA substrate to binding and catalysis by the Tetrahymena ribozyme. An energetic picture of an active site composed of RNA. Biochemistry, 1993, 32, 8299-8311.	1.2	121
137	Evidence for processivity and two-step binding of the RNA substrate from studies of J1/2 mutants of the Tetrahymena ribozyme. Biochemistry, 1992, 31, 1386-1399.	1.2	134
138	Ribozyme-catalyzed and nonenzymic reactions of phosphate diesters: rate effects upon substitution of sulfur for a nonbridging phosphoryl oxygen atom. Biochemistry, 1991, 30, 4844-4854.	1.2	276
139	Mutations in a nonconserved sequence of the Tetrahymena ribozyme increase activity and specificity. Cell, 1991, 67, 1007-1019.	13.5	88
140	DNA cleavage catalysed by the ribozyme from Tetrahymena. Nature, 1990, 344, 405-409.	13.7	139
141	Catalysis of the hydrolysis of phosphorylated pyridines by Mg(OH)+: a possible model for enzymic phosphoryl transfer. Biochemistry, 1990, 29, 5172-5179.	1.2	111
142	Catalysis of RNA cleavage by the Tetrahymena thermophila ribozyme. 1. Kinetic description of the reaction of an RNA substrate complementary to the active site. Biochemistry, 1990, 29, 10159-10171.	1.2	329
143	Catalysis of RNA cleavage by the Tetrahymena thermophila ribozyme. 2. Kinetic description of the reaction of an RNA substrate that forms a mismatch at the active site. Biochemistry, 1990, 29, 10172-10180.	1.2	107
144	Phosphoryl transfer to anionic oxygen nucleophiles. Nature of the transition state and electrostatic repulsion. Journal of the American Chemical Society, 1989, 111, 7587-7596.	6.6	89

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145	Evidence that metaphosphate monoanion is not an intermediate in solvolysis reactions in aqueous solution. Journal of the American Chemical Society, 1989, 111, 7579-7586.	6.6	100
146	The role of induced fit and conformational changes of enzymes in specificity and catalysis. Bioorganic Chemistry, 1988, 16, 62-96.	2.0	133
147	The effect of divalent metal ions on the rate and transition-state structure of phosphoryl-transfer reactions. Journal of the American Chemical Society, 1987, 109, 4665-4674.	6.6	140